IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

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Applicant(s):	Janniello et al.
Docket No.:	YOR920010386US2
Serial No.:	09/938,147
Filing Date:	August 22, 2001
Group:	2153
Examiner:	Aaron M. Strange

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Title: Method and Apparatus for Client Sharing of Cached Content

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REPLY BRIEF

Mail Stop Appeal Brief – Patents
20 Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

25 Sir:

Appellants hereby reply to the Examiner's Answer, mailed April 2, 2008 (referred to hereinafter as "the Examiner's Answer"), in an Appeal of the final rejection of claims 1-13 and 15-28 in the above-identified patent application.

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REAL PARTY IN INTEREST

A statement identifying the real party in interest is contained in Appellants' Appeal Brief.

35   RELATED APPEALS AND INTERFERENCES

A statement identifying related appeals is contained in Appellants' Appeal Brief.

STATUS OF CLAIMS

A statement identifying the status of the claims is contained in Appellants' Appeal Brief

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STATUS OF AMENDMENTS

A statement identifying the status of the amendments is contained in Appellants' Appeal Brief.

SUMMARY OF CLAIMED SUBJECT MATTER

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A Summary of the Invention is contained in Appellants' Appeal Brief.

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 21-23 are rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Claims 1-13 and 15-27 are rejected
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under 35 U.S.C. §103(a) as being unpatentable over Carter et al. and Humphrey, and claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Carter et al. and Mao et al.

CLAIMS APPEALED

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A copy of the appealed claims is contained in an Appendix of Appellants' Appeal Brief.

ARGUMENT

Point 1

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The Examiner asserts that the specification clearly states that the term "computer readable medium" is intended to include a "transmission medium" and that these embodiments are non-statutory, since they do not fall within any of the four statutory categories.

Appellants maintain that the "transmission medium" disclosed in the
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context of the present invention is statutory, as outlined in the original Appeal Brief

Point 2 (Examiner's Argument a)

The Examiner asserts that Carter teaches that the received content is stored in a cache based on various factors including data access patterns such as data that has been "recently accessed" and that these "data access patterns" are analogous to user

5   profiles since they reflect the patterns with which particular users access portions of the addressable memory space. The Examiner asserts that the present claims contain no language requiring the presence of a list or anything to "indicate a degree of interest of a user."

Appellants note that the term "user profile" has a well known definition in

10   the art. A person of ordinary skill in the art would recognize that a "user profile" is defined, for example, as *a list of likes and dislikes with associated probability values reflecting the degree of interest of a user*. Carter does *not* disclose or suggest that the data access patterns are lists, or that the access patterns indicate a degree of interest of a user.

15   Point 3 (Examiner's Argument b)

Regarding Appellants' argument that Carter does not disclose or suggest that the data access patterns indicate the access pattern(s) of a single user and, thus, cannot provide a profile of a user, the Examiner asserts that, since the pages are stored when requested by a particular user, the data access patterns of particular users are taken

20   into account, and the cache storage is based on a "profile" of the user's data access patterns. The Examiner further asserts that Appellants have failed to provide a limiting definition of the term "user profile" and that information representing the data access patterns of a particular user falls well within the broadest reasonable interpretation of that term.

25   Appellants maintain that the Examiner's interpretation of "user profile" is contrary to the well known definition of the cited term in the art. Moreover, Appellants note that, in general, a "profile" is defined as "a formal summary or analysis of data, *often in the form of a graph or table*, representing distinctive features or characteristics." Thus, even using this interpretation of the term "profile," Carter does *not* disclose or

30   suggest a "user profile."

Point 4

The Examiner asserts that information determined to be "of global interest" is information that is predicted to be of interest to each user that the information is sent to. The Examiner further acknowledges that Humphrey does *not* know whether

5 the information will be of interest to each and every user, but predicts that it will be of interest because it is of interest to a large number of other users.

As the Examiner acknowledges, Humphrey does *not* know whether the information will be of interest to each and every user. Humphrey only attempts to determine what information is of *global interest to the Internet community.* Since

10 Humphrey suggests that the information is of interest to both users who are actually interested in the information as well users who are *not* interested in the information, Humphrey does *not* attempt to determine what information is **predicted** *to be of interest to a user.* The determination of what information is predicted to be of interest to a user is critical to the proper operation of the system as it ensures that the system is not

15 overwhelmed with the global distribution of information to users who may or may not find the information useful, as would be apparent to a person of ordinary skill in the art.

Appeal Brief Arguments

Section 101 Rejections

20 Claims 21-23 were rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. In the Response to Arguments section of the final Office Action, the Examiner asserts that a computer readable medium as defined by Applicant on page 12 of the specification may be a recordable medium or a transmission medium and, as previously indicated, a transmission medium is not a

25 tangible medium. In the Advisory Action, the Examiner referred Applicants to pages 50-57 of the recently published "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility."

Appellants note that the term "tangible" means "having substance or material existence." (See, dictionary.com.) Contrary to the Examiner's assertion, a

30 ***transmission medium is a tangible entity, consisting of radio waves, light waves,***

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electronic signals, etc   Claims 21-23 require a *computer readable medium having computer readable code means embodied thereon*, and are therefore limited to *tangible* embodiments.

Regarding the Examiner's reference to the published guidelines,

5   Appellants note that the cited guidelines teach that,

from a technological standpoint, **a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer**. In other words, a

10   computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.
(Second to last paragraph on page 57; emphasis added.)

Regarding a computer-readable memory encoded with functional descriptive material, the published guidelines teaches that,

15   when functional descriptive material is recorded on some computer-readable medium **it becomes structurally and functionally interrelated to the medium and will be statutory in most cases** since use of technology permits the function of the descriptive material to be realized

20   (Page 50, second paragraph; emphasis added.)

As noted above, claims 21-23 require a *computer readable medium having computer readable code means embodied thereon*. Appellants note that computer readable code means is classified as functional descriptive material and that claims 21-23 are therefore directed to statutory subject matter. Thus, Appellants respectfully request

25   that the section 101 rejections be withdrawn.

Independent Claims 1, 9, 15, 18-23 and 28

Independent claims 1, 9, 15, and 18-23 were rejected under 35 U.S.C §103(a) as being unpatentable over Carter et al and Humphrey and independent claims 1, 9, 15, 18-23, and 28 were rejected under 35 U.S.C §103(a) as being unpatentable over

30   Carter et al and Mao et al. Regarding claim 1, the Examiner asserts that Carter discloses receiving content broadcast to a client (col. 27, lines 65-66) and storing said received content in said client-side cache (col. 28, lines 7-10). In the Response to Arguments section of the final Office Action, the Examiner asserts that Carter clearly discloses storing content based on a user profile (Carter's system utilizes a migration controller that

manages the storage of content based on, among other items, user data access patterns (col. 14, lines 40-46)). The Examiner further asserts that Mao also stores content based on a user profile (Mao only stores the most recently accessed web pages (col. 8, lines 61-65, and col. 9, lines 3-7)). In the Advisory Action, the Examiner asserts that a "user

5   profile" is merely any data set that represents characteristics of users and maintains that the data access patterns taught by Carter are analogous to Applicant's claimed user profile.

Appellants note that the present specification, as amended, teaches that, "for example, the user profile 260 might provide a list of the users most popular sites."

10   (Page 6, line 10, of the amended specification; emphasis added.) User profile 260 is a data entity (see, FIGS. 2 and 3). Regarding the Examiner's assertion that the data access patterns taught by Carter are analogous to Applicant's claimed user profile, Appellants note that this definition is contrary to the well known definition of a user profile. For example, Lalmas et al. in a report entitled "Personalised Enriched Broadcast Experience"

15   teach that *"users profiles were represented as a list of likes and dislikes with associated probability values reflecting the degree of interest."*

(See, http://www.ercim.org/publication/Ercim_News/enw62/lalmas.html.) Carter does not disclose or suggest that the data access patterns are lists, or that the access patterns indicate a degree of interest of a user. In addition, Carter does not disclose or suggest

20   that the data access patterns indicate the access pattern(s) of a single user and, thus, cannot provide a profile of **a user**.

Neither Carter, Humphrey, nor Mao, however, address the issue of storing content *based on a user profile*, as defined in the present disclosure. Humphrey, for example, is directed to broadcasting information, for example, "when the rate of requests

25   for information exceeds a predetermined number over a predetermined time." (Paragraph 52) Carter is directed to a shared client-side Web cache, wherein the Web cache is shared by a particular group of users. (Col 2, lines 38-40.) In the text cited by the Examiner, Carter teaches that "the migration controller can determine and respond to data access patterns, resource demands or any other criteria or heuristic suitable for practice

30   with the invention. Accordingly, the migration controller can balance the loads on the

network, and move data to nodes from which it is commonly accessed." (Col. 14, lines 40-45.) Mao is directed to formatting Internet HTML Web page data to fit within a standard MPEG-2 data packet structure, and multiplexing it along with other MPEG-2 digital video signals for transport within a multiple channel digital video system (see, Abstract). In the text cited by the Examiner, Mao teaches that "between the two extremes of no storage at one end, and 100% local storage of the rotating carousel at the other end, there is a variety of partial storage options. One option is to use a high-speed cache to store a number of the most recently accessed Web pages." (Col. 8, lines 61-65.) Neither the data access patterns taught by Carter nor the most recently accessed Web pages taught by Mao are user profiles, as defined in the present specification and as understood by a person of ordinary skill in the art. Independent claims 1, 9, 15, 18-23, and 28 require *storing content based on a user profile.*

Thus, Carter et al., Humphrey, and Mao et al., alone or in combination, do not disclose or suggest storing content based on a user profile, as required by independent claims 1, 9, 15, 18-23, and 28.

Dependent Claims 25 and 27

Dependent claims 25 and 27 were rejected under 35 U.S.C §103(a) as being unpatentable over Carter et al. and Humphrey and under 35 U.S.C. §103(a) as being unpatentable over Carter et al. and Mao et al. Regarding claims 25 and 27, the Examiner acknowledges that Carter fails to specifically recite where received content was predicted to be of interest to a user, but asserts that Humphrey discloses predicting content of interest to a user (page 2, paragraph 24), and then sending the content predicted to be of interest prior to a client request (page 2, paragraph 25). The Examiner further asserts that Mao discloses that said "broadcast content to said client…was predicted to be of interest to a user." (Col. 4, lines 6-9.)

Appellants note that, in the text cited by the Examiner, Humphrey teaches to "determine what information is of *global interest to the Internet community.*" (Page 2, paragraph 24; emphasis added.) Appellants also note that, in the text cited by the Examiner, Mao teaches that "typical broadcast Web sites contain news, weather and

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sports, but can be any Web site of general interest to many viewers." (Col. 4, lines 6-9.) Neither Humphrey nor Mao discloses or suggests to determine what information is *predicted to be of interest to a user.* In addition, Appellants could find no disclosure or suggestion in either Carter, Humphrey, or Mao to combine the determination of what

5   information is of interest to the Internet community, with the invention of Carter.

Thus, Carter et al., Humphrey, and Mao, alone or in combination, do not disclose or suggest wherein said received content was predicted to be of interest to a user, as required by claim 25, and do not disclose or suggest wherein said content in said remote client cache was predicted to be of interest to a user, as required by claim 27.

10   Conclusion

The rejections of the cited claims under 35 U.S.C. §103(a) as being unpatentable over Carter et al. and Humphrey, and under 35 U.S.C. §103(a) as being unpatentable over Carter et al. and Mao et al. are therefore believed to be improper and should be withdrawn. The remaining rejected dependent claims are believed allowable

15   for at least the reasons identified above with respect to the independent claims.

The attention of the Examiner and the Appeal Board to this matter is appreciated.

Respectfully,

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Date: May 30, 2008

Kevin M. Mason
Attorney for Applicant(s)
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560

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CLAIMS APPENDIX

1. A method for storing digital content in a client-side cache, said method comprising the steps of:

receiving content broadcast to a client via a wireless broadcast connection, wherein said client is a machine that serves one or more users on a local area network;

storing said received content in said client-side cache based on a user profile; and

making said content in said client-side cache available to other clients

2. The method of claim 1, further comprising the step of determining if requested content is in said client-side cache before requesting said content from a remote source.

3. The method of claim 1, further comprising the step of requesting said content from an edge server if said requested content is not in said client-side cache.

4. The method of claim 1, further comprising the step of requesting said content from a provider of said content if said requested content is not in said client-side cache.

5. The method of claim 1, further comprising the step of requesting said content from another client cache if said requested content is not in said client-side cache

6. The method of claim 5, wherein said step of requesting said content from another client cache further comprises the step of accessing a directory to determine where said content is cached.

7. The method of claim 1, further comprising the step of providing information to a central cache directory regarding content that is stored in said client-side cache.

8. The method of claim 1, wherein said content in said client-side cache is made available to other clients using a point-to-point link.

9. A method for obtaining content over a network, said method
5   comprising the steps of:

        determining if requested content is in a local cache; and

        requesting said content from a remote client cache if said requested content is not in said local cache, wherein said content in said remote client cache was broadcast to a client via a wireless broadcast connection, wherein said client is a machine
10   that serves one or more users on a local area network, and wherein said content was stored in said remote client cache based on a user profile.

10. The method of claim 9, further comprising the step of requesting said content from a remote source if said requested content is not in said remote client cache.
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11. The method of claim 9, further comprising the step of requesting said content from an edge server if said requested content is not in said remote client cache.

12 The method of claim 9, further comprising the step of requesting said
20   content from a provider of said content if said requested content is not in said remote client cache

13. The method of claim 9, wherein said step of requesting said content from a remote client cache further comprises the step of accessing a directory to
25   determine where said content is cached.

14. (Cancelled)

15. A method for sharing digital content among a plurality of users, said
30   method comprising the steps of:

storing content broadcast to a client via a wireless broadcast connection in a client-side cache of at least one client, wherein said client is a machine that serves one or more users on a local area network and wherein said content is stored based on a user profile;

5   making said content in said client-side cache available to a plurality of additional clients; and

maintaining a directory of said content made available to a plurality of additional clients.

10   16. The method of claim 15, wherein a user determines if requested content is in said directory before requesting said content from another remote source.

17. The method of claim 15, wherein said content in said client-side cache is made available to other clients using a point-to-point link.

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18. A system for storing digital content in a client-side cache, said system comprising:

a memory that stores computer-readable code; and

a processor operatively coupled to said memory, said processor configured

20   to implement said computer-readable code, said computer-readable code configured to:

receive content broadcast to a client via a wireless broadcast connection, wherein said client is a machine that serves one or more users on a local area network;

store said received content in said client-side cache based on a user profile; and

25   make said content in said client-side cache available to other clients.

19. A system for obtaining content over a network, said system comprising:

a memory that stores computer-readable code; and

30   a processor operatively coupled to said memory, said processor configured

to implement said computer-readable code, said computer-readable code configured to:

  determine if requested content is in a local cache; and

  request said content from a remote client cache if said requested content is not in said local cache, wherein said content in said remote client cache was broadcast to

5 a client via a wireless broadcast connection, wherein said client is a machine that serves one or more users on a local area network, and wherein said content was stored in said remote client cache based on a user profile.

  20. A system for sharing digital content among a plurality of users, said

10 system comprising:

  a memory that stores computer-readable code; and

  a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:

  store content broadcast to a client via a wireless broadcast connection in a

15 client-side cache of at least one client, wherein said client is a machine that serves one or more users on a local area network and wherein said content is stored based on a user profile;

  make said content in said client-side cache available to a plurality of additional clients; and

20 maintain a directory of said content made available to a plurality of additional clients.

  21. An article of manufacture for storing digital content in a client-side cache, comprising:

25 a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

  a step to receive content broadcast from a central server to a client via a wireless broadcast connection, wherein said client is a machine that serves one or more users on a local area network;

30 a step to store said received content in said client-side cache based on a

user profile; and

a step to make said content in said client-side cache available to other clients.

5   22. An article of manufacture for obtaining content over a network, comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

a step to determine if requested content is in a local cache; and

10   a step to request said content from a remote client cache if said requested content is not in said local cache, wherein said content in said remote client cache was broadcast to a client via a wireless broadcast connection, wherein said client is a machine that serves one or more users on a local area network, and wherein said content was stored in said remote client cache based on a user profile.

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23. An article of manufacture for sharing digital content among a plurality of users, comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

20   a step to store content broadcast to a client via a wireless broadcast connection in a client-side cache of at least one client, wherein said client is a machine that serves one or more users on a local area network and wherein said content is stored based on a user profile;

a step to make said content in said client-side cache available to a plurality

25   of additional clients; and

a step to maintain a directory of said content made available to a plurality of additional clients.

24. The method of claim 1, wherein said content broadcast to said client is

30   broadcast prior to being requested by a user.

25. The method of claim 1, wherein said received content was predicted to be of interest to a user.

26. The method of claim 9, wherein said content in said remote client
5   cache was broadcast prior to being requested by a user.

27. The method of claim 9, wherein said content in said remote client cache was predicted to be of interest to a user.

10   28. A method for storing digital content in a client-side cache, said method comprising the steps of:

receiving content broadcast to a client via a wireless broadcast connection, wherein said client is a machine that serves one or more users on a local area network and wherein said client is tuned to receive said wireless broadcast connection via a digital
15   television channel;

storing said received content in said client-side cache based on a user profile; and

making said content in said client-side cache available to other clients.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to § 1.130, 1.131, or 1.132 or entered by the Examiner and relied upon by appellant.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 CFR 41.37.